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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

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“Step Out From the Old to the New”

IS 12104 (1987): Abacus for Visually Handicapped [MHD 10: Medical Laboratory Instruments]

“ज्ञान से एक नये भारत का निर्माण”

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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”





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*Indian Standard*

## SPECIFICATION FOR ABACUS FOR VISUALLY HANDICAPPED

**1. Scope** — Specifies dimensional and other requirements of abacus used by the visually handicapped or sighted persons.

**2. Shape and Dimensions** — As shown in Fig. 1.

### **3. Material**

**3.1 Frame** — Suitable material like light weight wood, high density polyethylene ( see IS : 7328-1974 Specification for high density polyethylene materials for moulding and extrusion ) or polypropylene ( see IS : 10951-1984 Specification for polypropylene and propylene-copolymer thermoplastics — Designations ).

**3.2 Beads** — Suitable thermoplastics such as PVC ( see IS : 9766-1981 Specification for flexible PVC compounds ), polypropylene ( see IS : 10951-1984 ) and high density polyethylene ( see IS : 7328-1974 ).

**3.3 Steel Wire** — Stainless steel wire ( see IS : 6528-1972 Specification for stainless steel wire ) or silver steel wire.

**4. Workmanship and Finish** — The wooden frame shall be free from sharp edges and other surface imperfections and shall be coated with 3 coats of polish with wax finish.

**4.1 Column Indication** — Column indication shall be raised in the form of alternative raised dots in order to make the calculation more discriminative.

**4.2** The entire assembly shall have a smooth surface, free from rough and sharp edges.

**4.3** Beads shall remain static immediately after setting or clearing. The movement of the beads shall be smooth while in use.

**5. Marking** — The abacus shall be marked with manufacturer's name, initials or recognized trademark.

**5.1 Certification Marking** — Details available with the Bureau of Indian Standards.

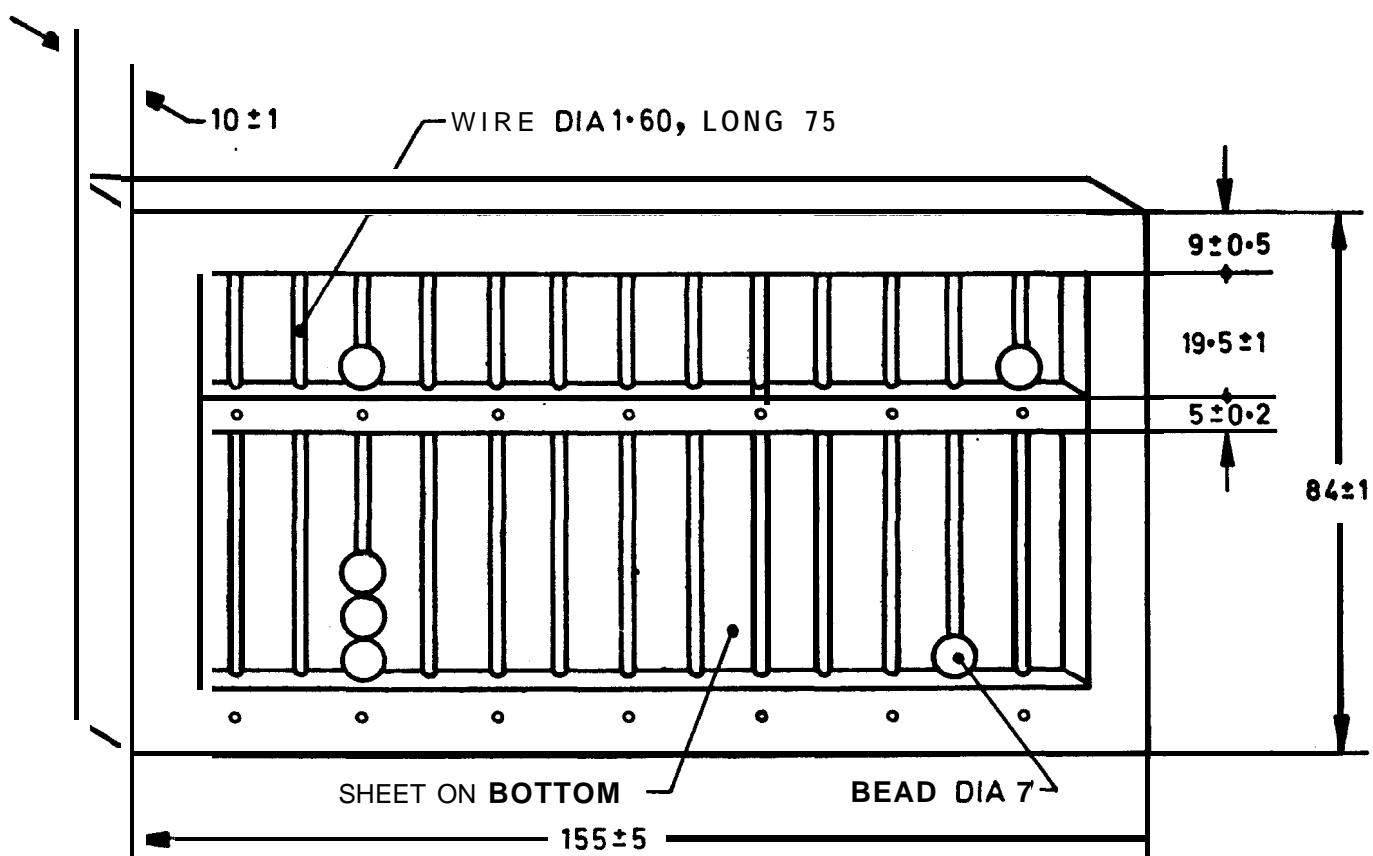
**6. Packing** — As agreed to between the purchaser and the supplier.

**7. Sampling** — Sampling scheme and criteria for acceptance shall be as agreed to between the manufacturer and the purchaser. However, a recommended sampling plan is given below.

**7.1** Unless otherwise agreed to between the purchaser and the supplier, the sampling procedure given in IS : 2500 ( Part 1 )-1973 'Sampling inspection tables : Part 1 Inspection by attributes and by count of defects ( first revision )' shall be followed.

**7.2 Lot** — All abaci, in a single consignment, of the same shape, same size and belonging to the same batch of manufacture, shall be grouped together to constitute a lot.

**7.3** For all the specification requirements, a single sampling plan with Inspection Level V and AQL 4 percent given in Tables 1 and 2 of IS : 2500 ( Part 1 )-1973 shall be followed.



All dimensions in millimetres.

FIG. 1 ABACUS, TYPICAL

#### EXPLANATORY NOTE

An abacus can be employed for making simple calculations with the help of beads which slide on wires. Intended specially for use by the visually handicapped, the abacus covered in this standard can also be used by sighted persons in elementary learning.